Time Domain of Spectral Distribution of Hyper Dense Photonic Signal

Time Averaged Photonic Hyper Dense Spectrum

Time Domain of Spectral Distribution
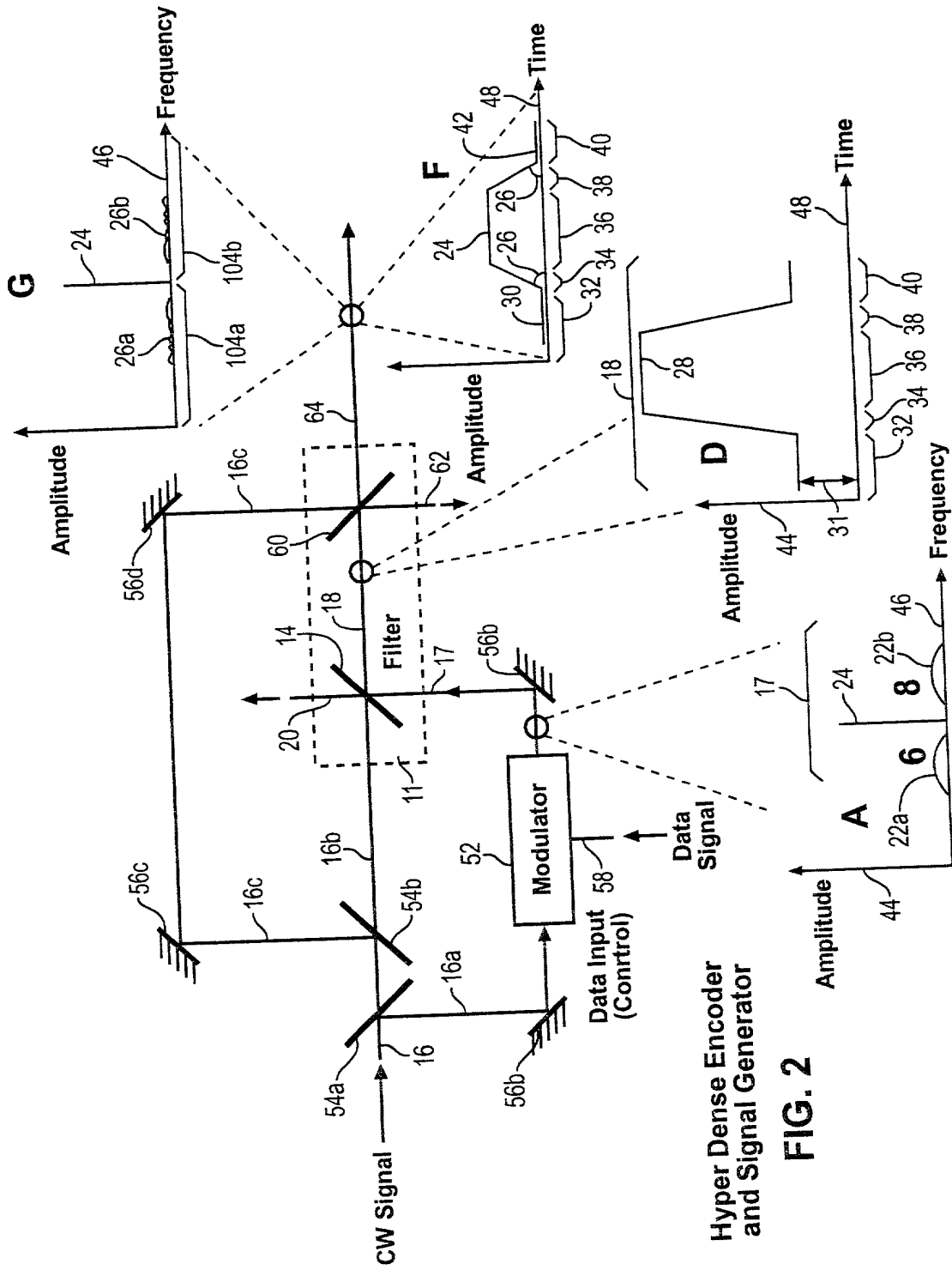
Time Averaged Input and Output Spectrum

Modulated Source
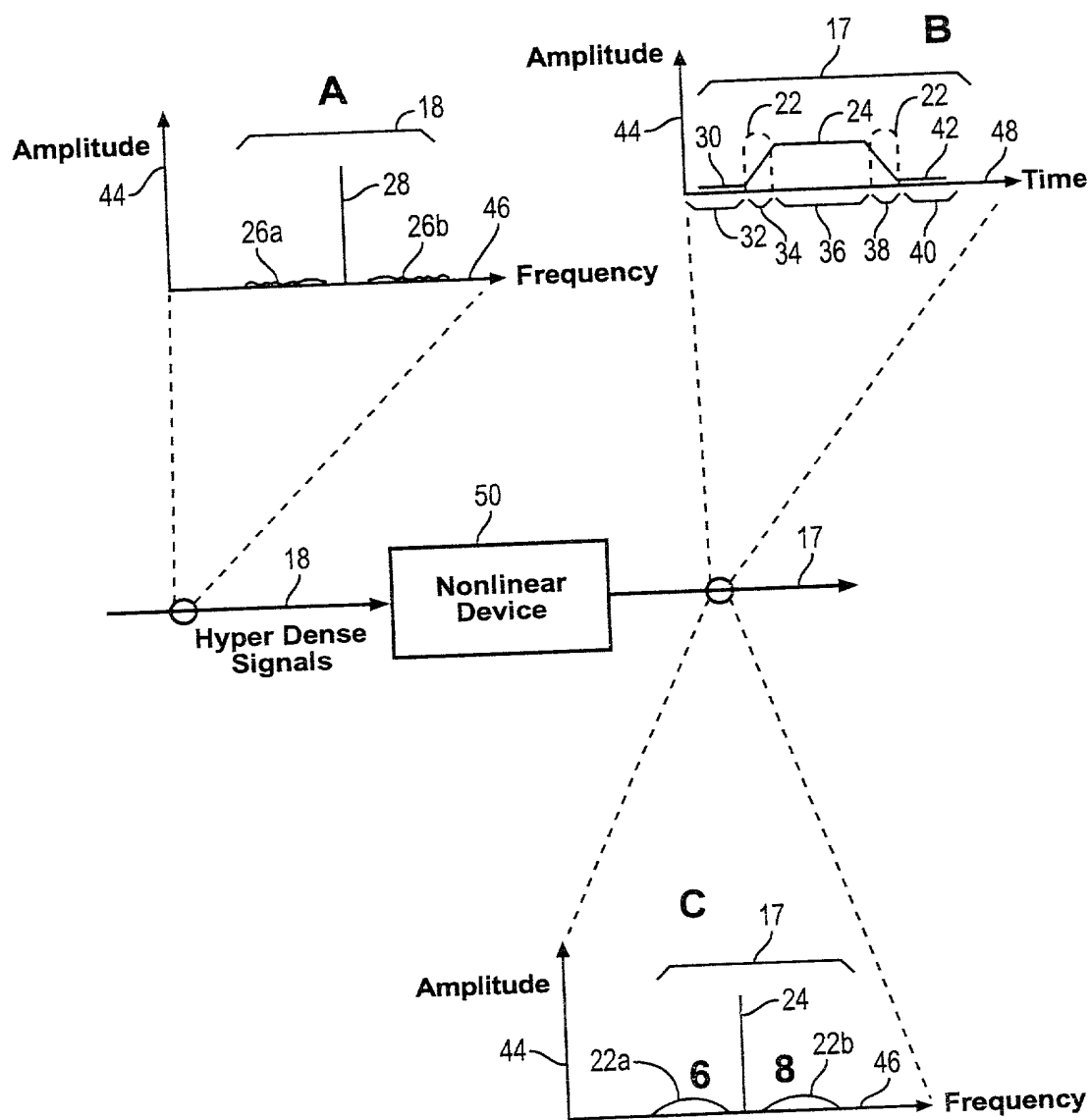
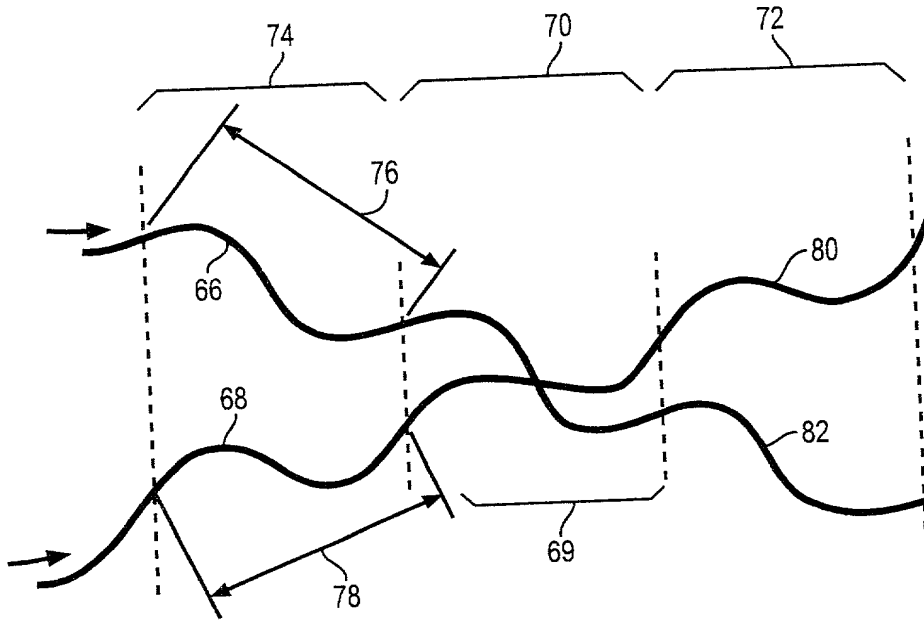FIG. 1

Hyper Dense Encoder
and Signal Generator
FIG. 2

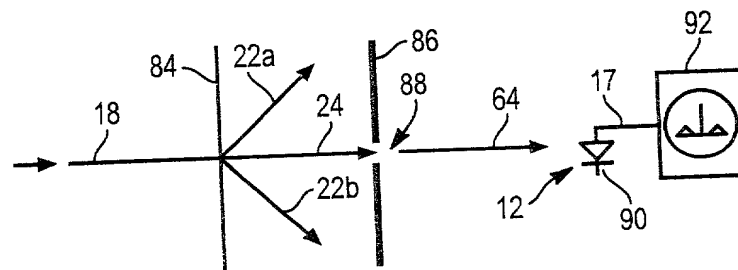FIG. 3

FIG. 4

FIG. 5
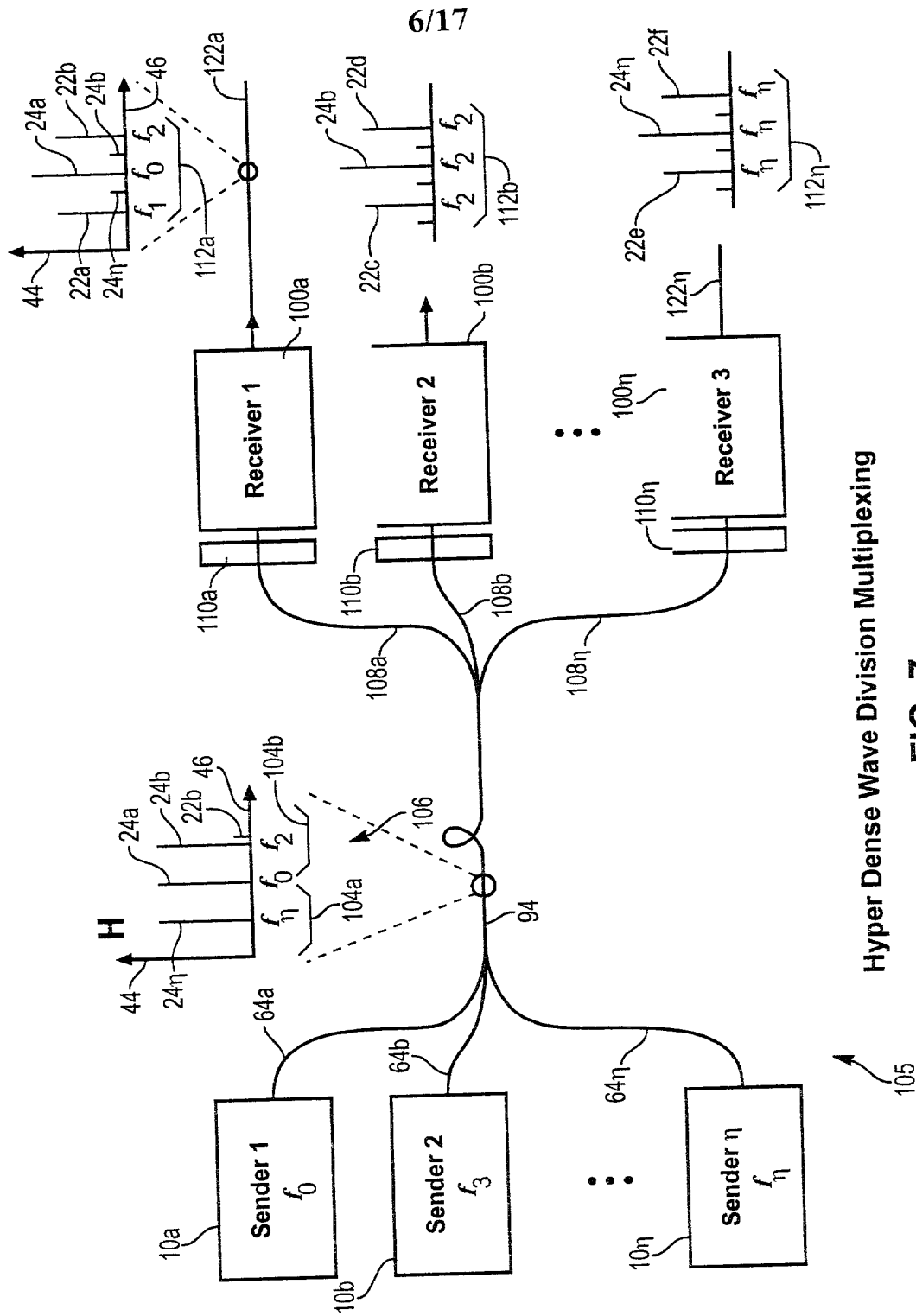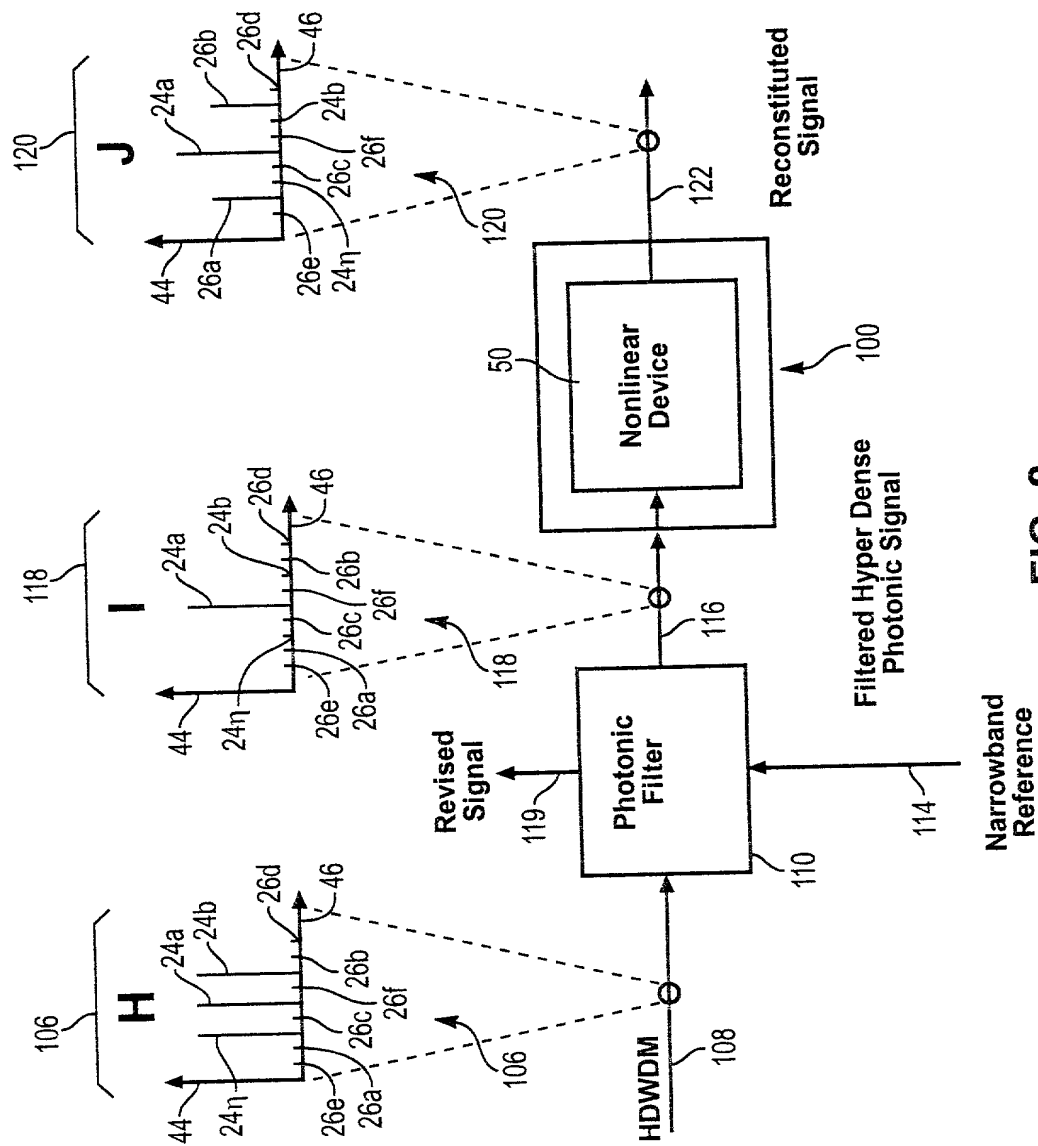
FIG. 6

Hyper Dense Wave Division Multiplexing

FIG. 7

FIG. 8

Hyper Dense Wave Division Demultiplexor (HDWDDM)
Using Drop-Filter Band Selection

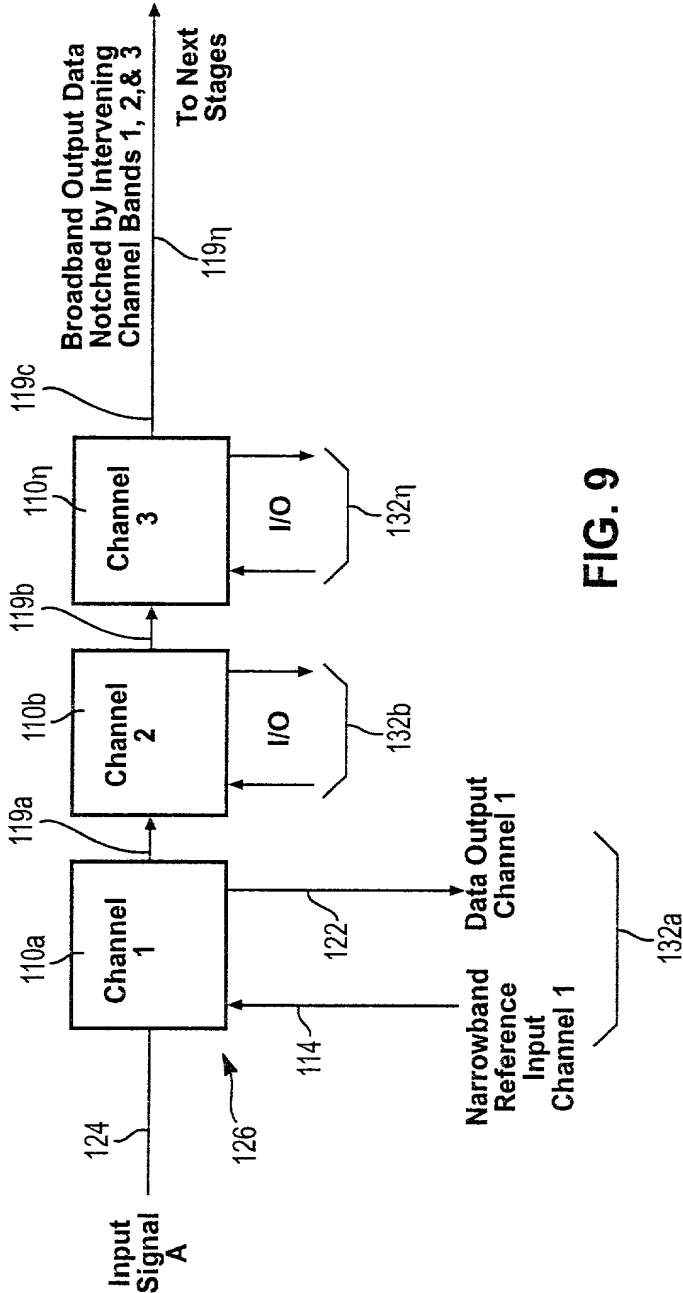Input
Signal
A

124

126

110a

Channel
1

119a

110b

Channel
2

119b

110η

Channel
3

119c

119η

Broadband Output Data
Notched by Intervening
Channel Bands 1, 2, & 3

To Next
Stages

114

122

Data Output
Channel 1

Narrowband
Reference
Input
Channel 1

132a

I/O

132b

I/O

132η

FIG. 9

Drop Filter

126

Narrowband Input Reference Signal

128

138

Frequency Phase Compensator

Broadband Input Signal

124

136a

L_1

140

L_2

136b

142

BS_1

Path 1

Path 2

144

146a

M_1

M_2

146b

Combiner

134

130

148

Residual Output
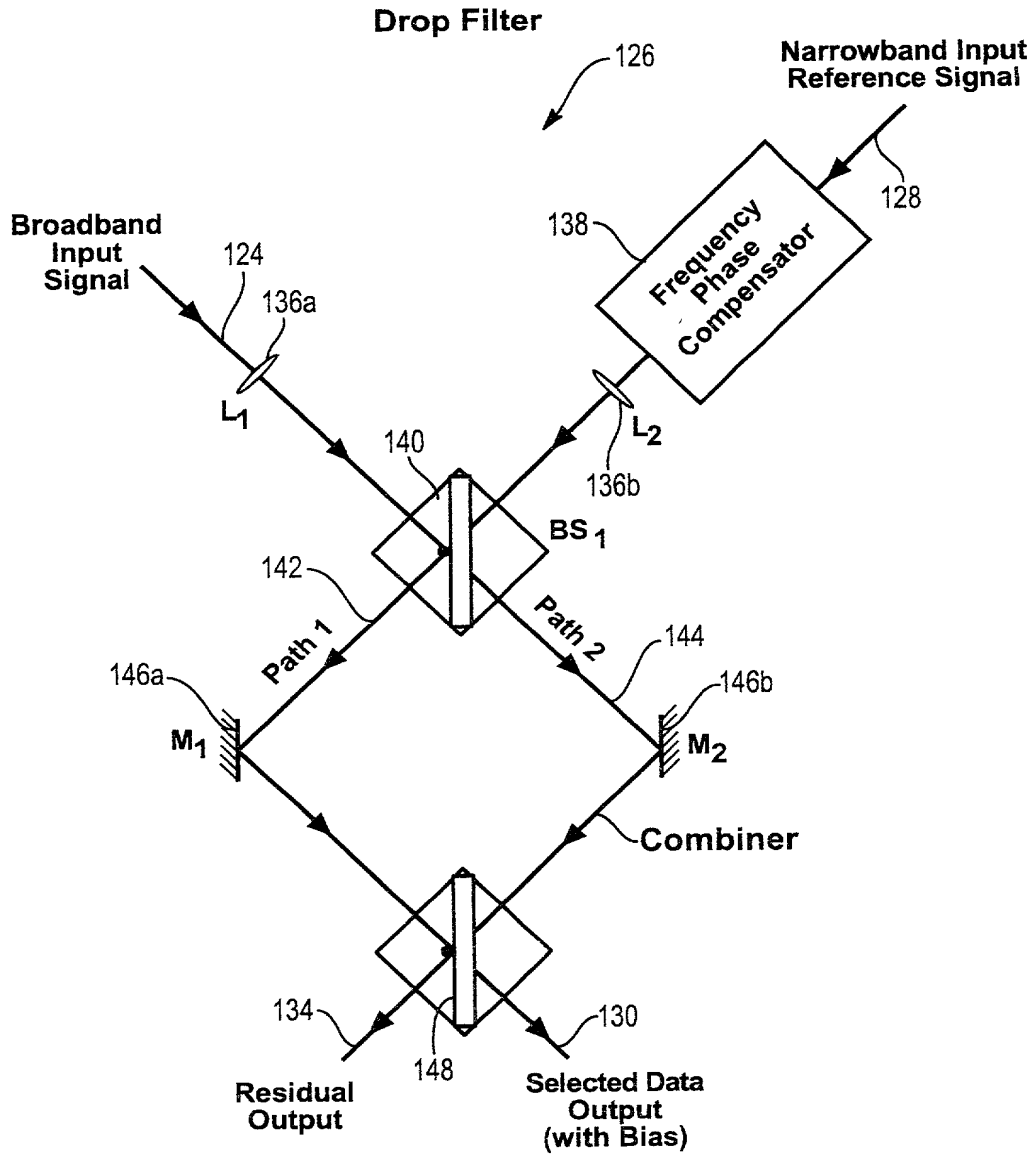
Selected Data Output (with Bias)

FIG. 10

**Super Hyper Wave Division Demultiplexor (HDWDDM)
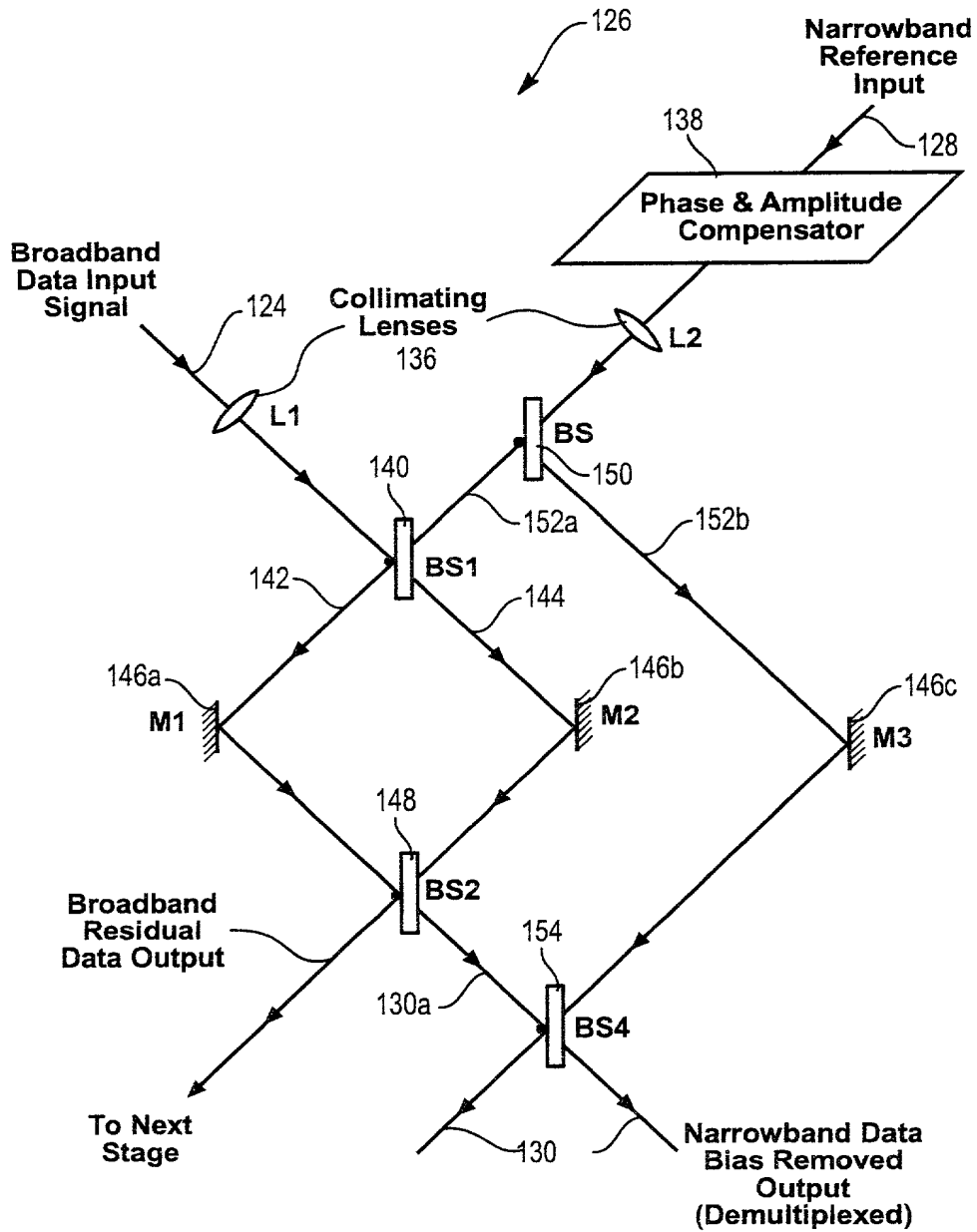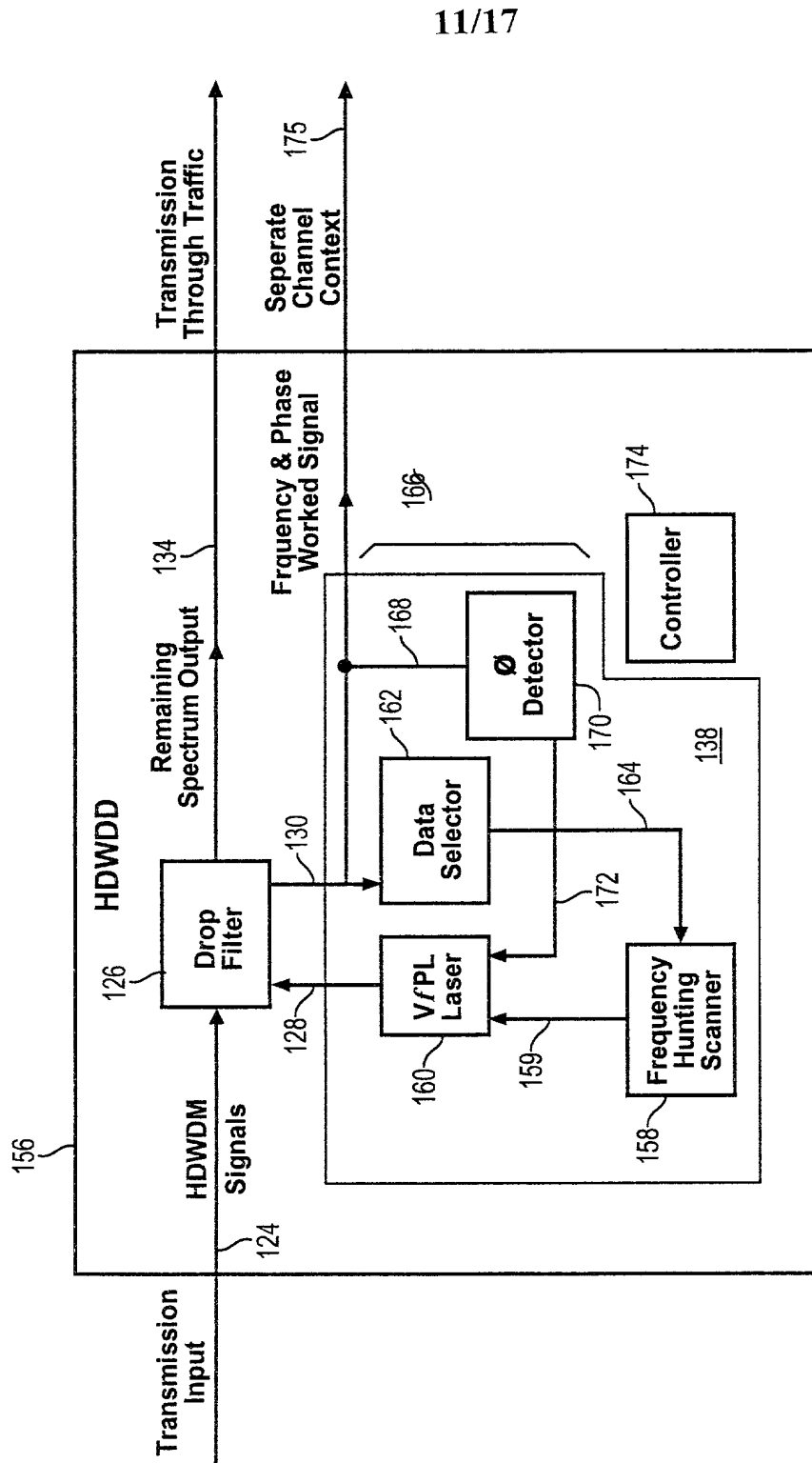Using Drop Filter Band Selection**

FIG. 11

FIG. 12

Hyper Dense Channel Separator
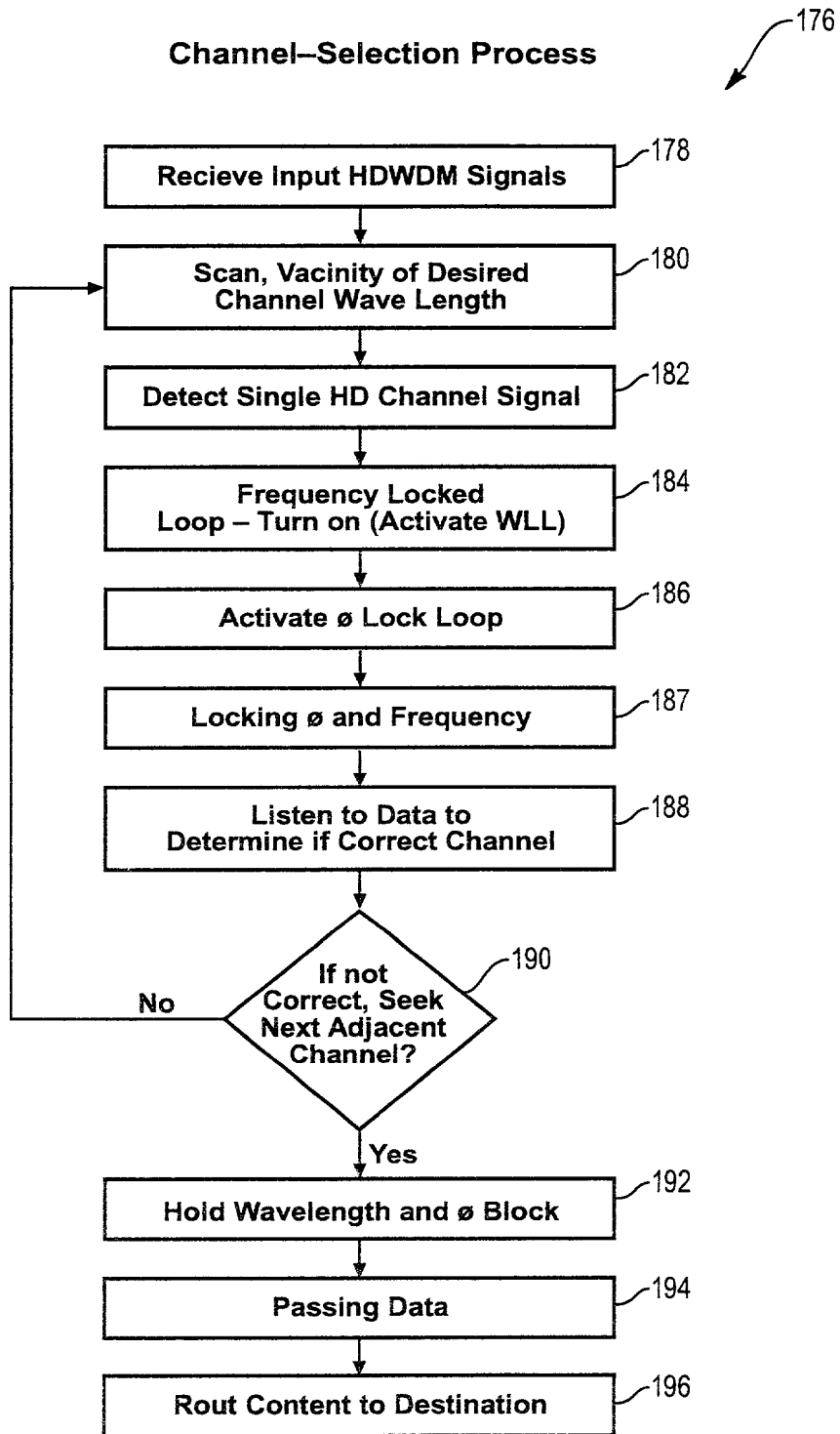
Channel–Selection Process

—176

| Recieve Input HDWDM Signals | —178 |

| Scan, Vacinity of Desired Channel Wave Length | —180 |

| Detect Single HD Channel Signal | —182 |

| Frequency Locked Loop – Turn on (Activate WLL) | —184 |

| Activate ø Lock Loop | —186 |

| Locking ø and Frequency | —187 |

| Listen to Data to Determine if Correct Channel | —188 |

If not Correct, Seek Next Adjacent Channel? —190

No

Yes

| Hold Wavelength and ø Block | —192 |

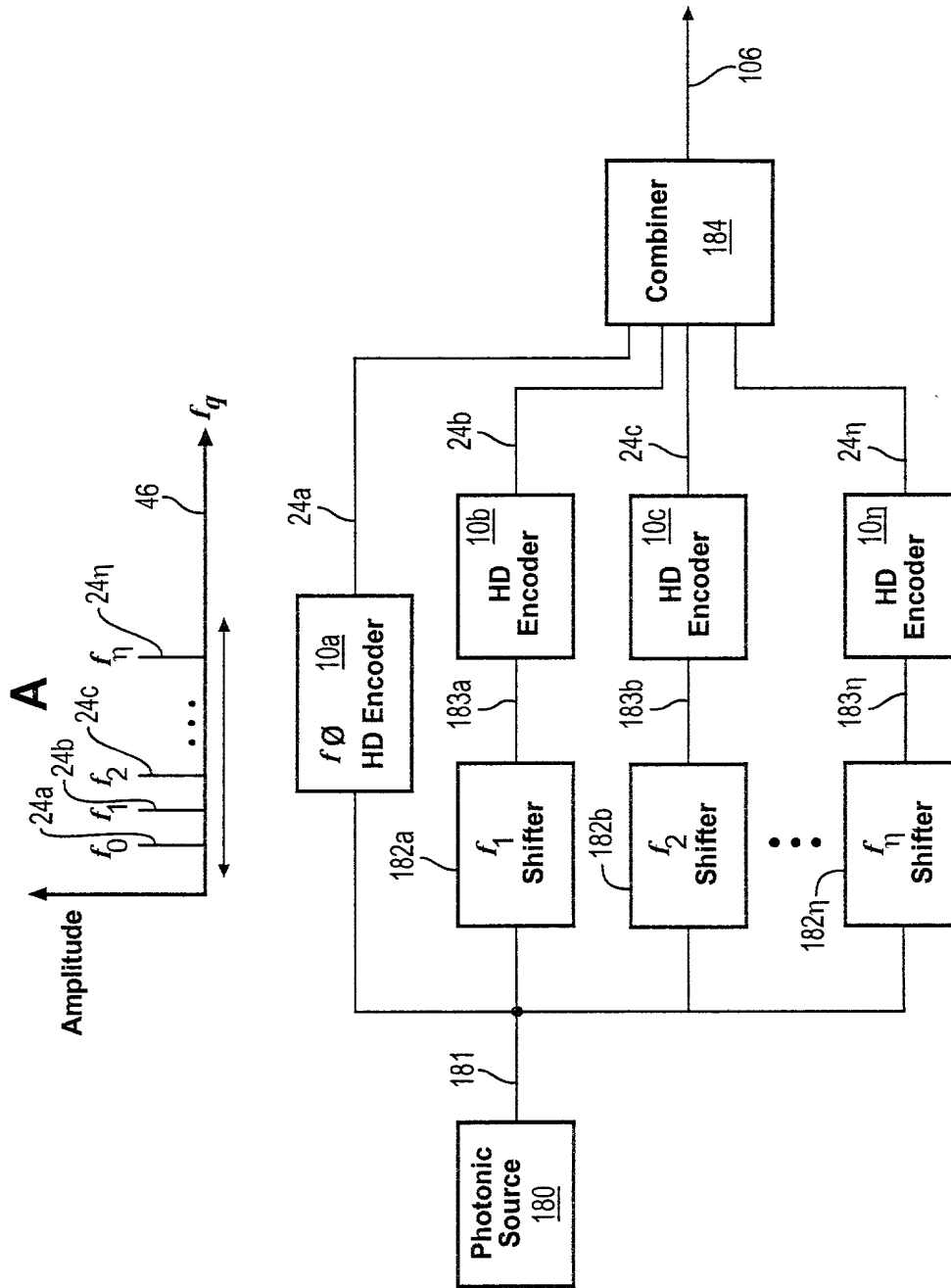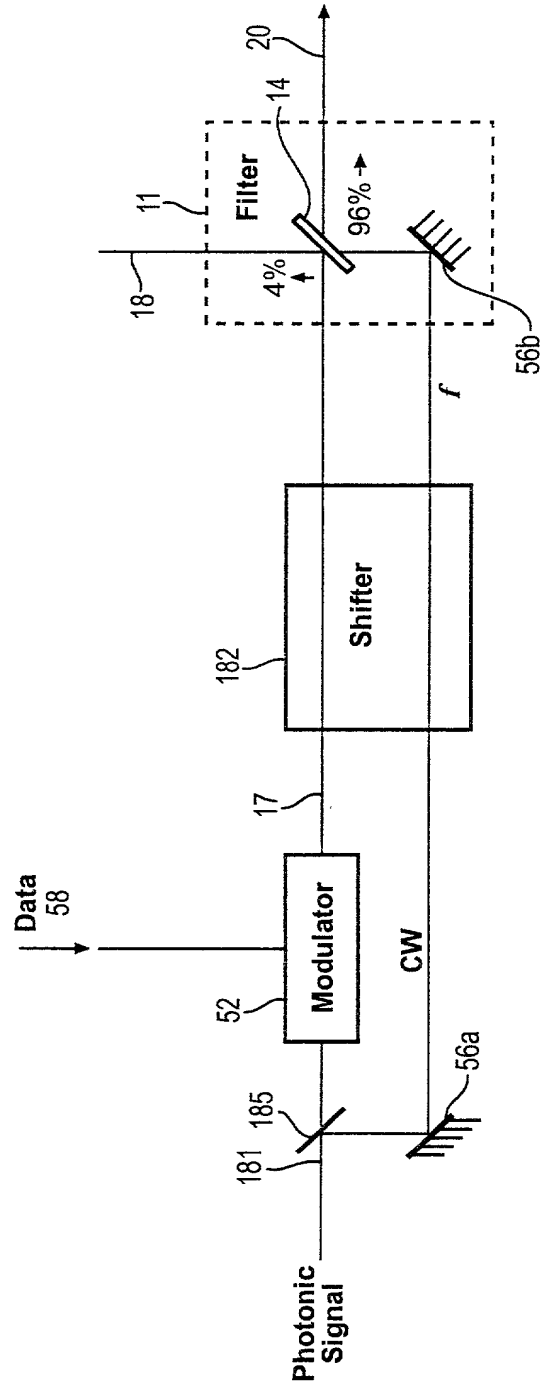| Passing Data | —194 |

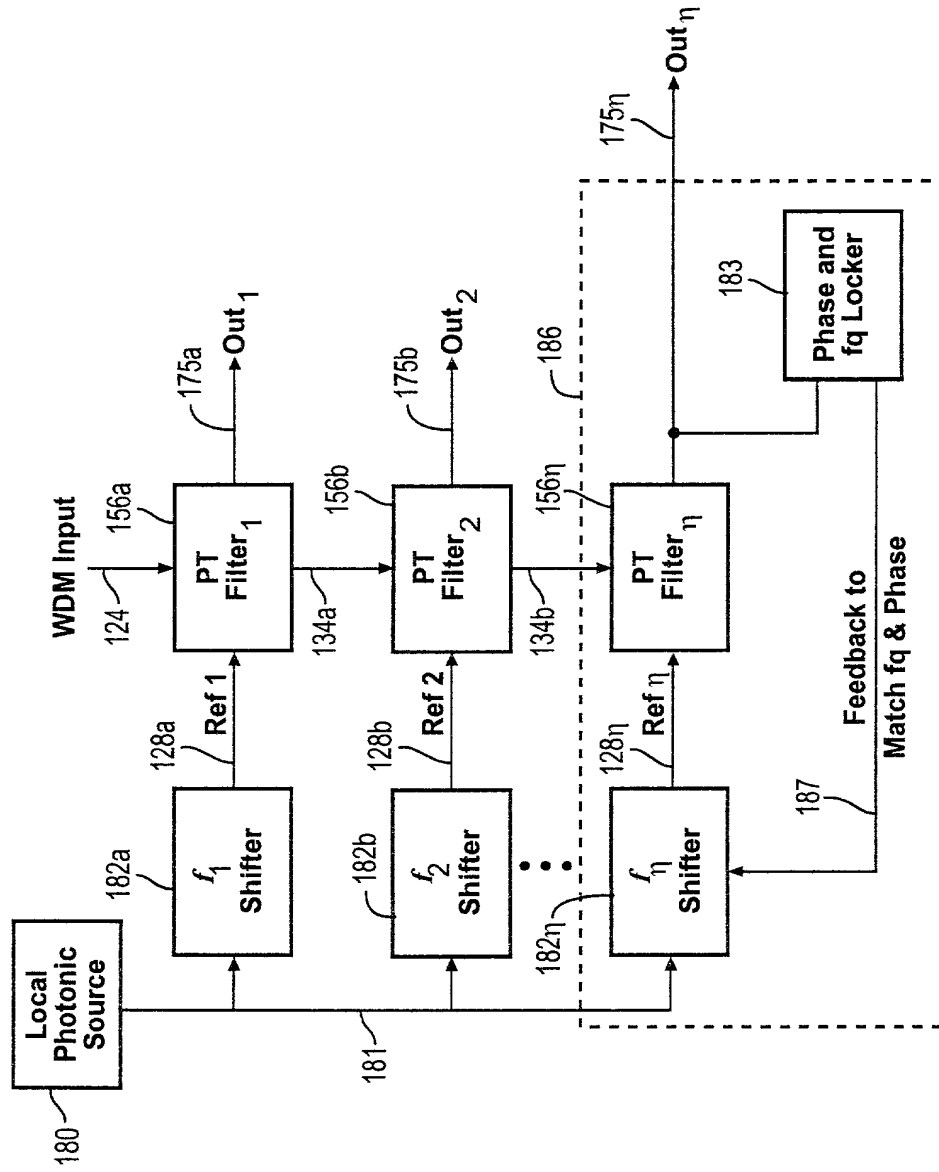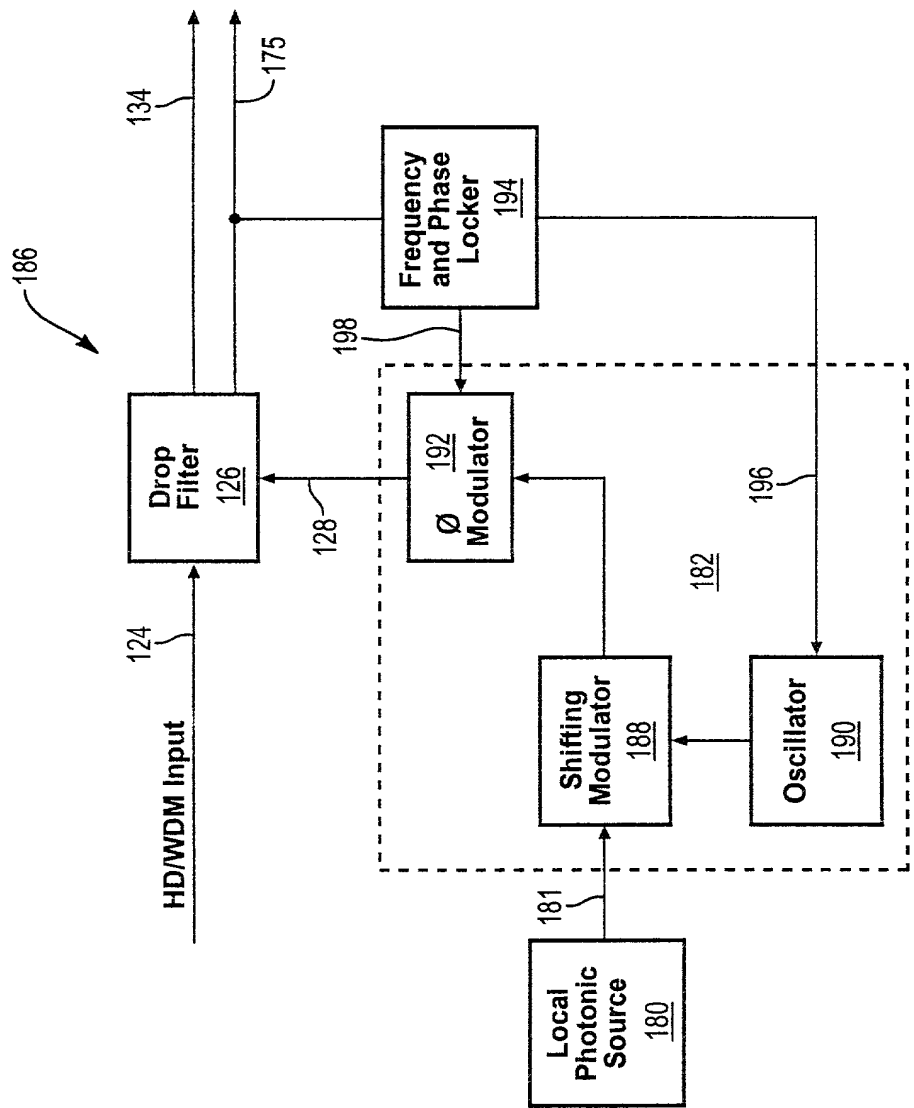| Rout Content to Destination | —196 |

FIG. 13

HDWDM Multiplexer

FIG. 14

Hyper Dense Frequency Shifted Signals
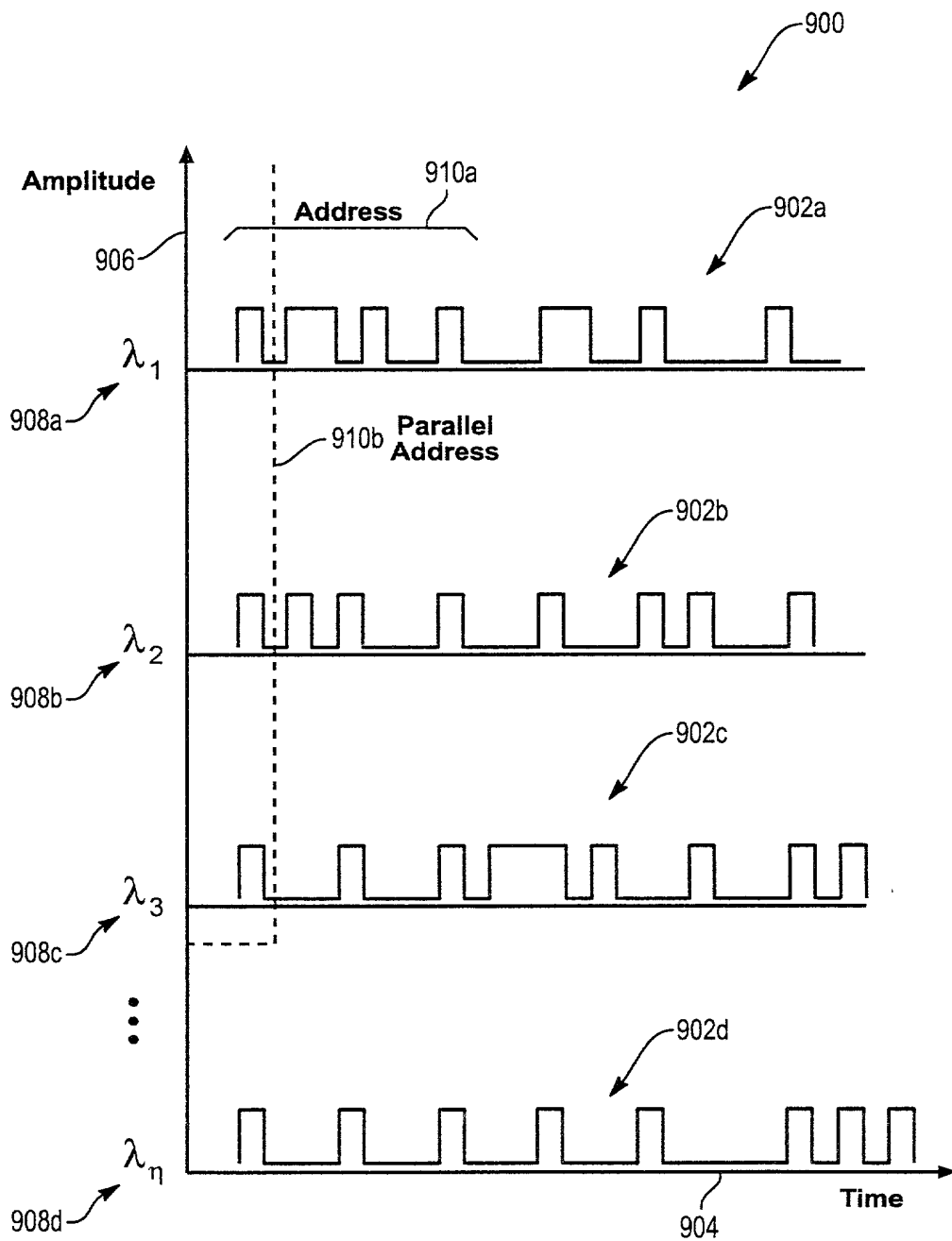
FIG. 15

WDM Demux With Subscriber Tracking

FIG. 16

Channel Separation Assembly

FIG. 17

Multi–Wavelengths Packet

FIG. 18